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THE UNITED STATES PATENT AND TRADEMARK OFFICE  
(Docket No. 25658-458300)

In re the Application of:

GAUTHIER ET AL.

Serial No. 09/349,575

Filed: July 8, 1999

For: Method and Apparatus for Controlling Brushless  
DC Motors in Implantable Medical Devices

MAIL STOP: Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

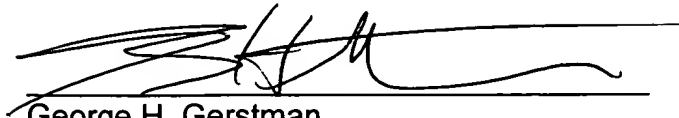
**INFORMATION DISCLOSURE STATEMENT**

Dear Sir:

Submitted herewith this Information Disclosure Statement comprising the materials submitted by an opposer in connection with Applicant's corresponding Australian application. A Citation Form 1449 is included, listing the prior art cited by the opposer and the generic opposition materials. A copy of the opposition materials, including copies of the prior art except for U.S. patents, is enclosed with this Information Disclosure Statement.

A check for the IDS submission fee, is the amount of \$180.00, is enclosed. If this amount is deficient, please charge the balance to Seyfarth Shaw LLP Deposit Account No. 19-1351.

Respectfully submitted,  
SEYFARTH SHAW LLP

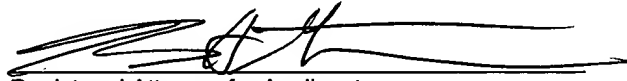


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Registration No. 22,419  
Attorney for Applicant

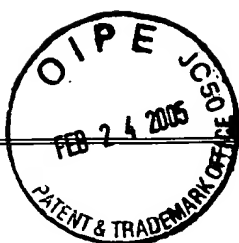
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Chicago, Illinois 60603  
(312) 269-8567

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I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Mail Stop: Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on Feb. 22, 2005, 2005.



Registered Attorney for Applicant  
Date: Feb. 22, 2005



FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE  
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## LIST OF REFERENCES CITED BY APPLICANT

## U. S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	5,780,983	7/98	Shinkawa et al.			
	AB	4,812,724	3/89	Langer et al.			
	AC	5,711,753	1/98	Pacella et al.			
	AD	5,783,920	7/98	Hahn			
	AE	5,177,416	1/93	Inaji et al.			
	AF	5,057,753	10/91	Leuthold et al.			
	AG	5,783,917	7/98	Takekawa			
	AH	5,527,159	6/96	Bozeman, Jr. et al.			
	AI	5,678,306	10/97	Bozeman, Jr. et al.			
	AJ	5,888,242	3/99	Antaki et al.			
	AK	4,928,043	5/90	Plunkett			

## FOREIGN PATENT DOCUMENTS

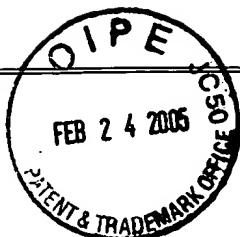
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## OTHER REFERENCES (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	AO	Opposition filed by Ventracor Limited In Australia Pat. No. 771931, including declarations of P. Skevington, S. Sathiakumar, G. P. Hunter; P. J. Ayre and T. Yiu
	AP	"Comparative Study of the Design and Development of Direct Drive Brushed and Brushless DC Motors with Samarium Cobalt, Neodymium-Iron-Boron and Ceramic Magnets", S.K. Pal; Muirhead Vactric Components Ltd. (7 pgs; date unknown)
	AQ	"Literature Survey of Permanent Magnet AC Motors and Drives", P. Pillay et al. Department of Electrical Engineering; University of Newcastle Upon Tyne; (1989; pgs. 74-84)

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your next communication to applicant.

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## U. S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	5,635,810	6/97	Goel			
	AB	5,869,944	2/99	Tanina			
	AC	5,420,492	5/95	Sood et al.			
	AD	5,929,577	7/99	Neidorff et al.			
	AE	4,654,566	3/87	Erdman			
	AF	5,859,520	1/99	Bourgeois et al.			
	AG	5,990,643	11/99	Holling et al.			
	AH	5,708,337	1/98	Breit et al.			
	AI	5,949,203	9/99	Buthker			
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## FOREIGN PATENT DOCUMENTS

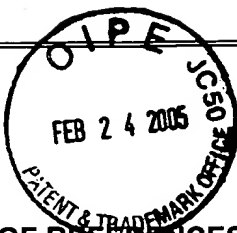
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	AO	"Study of Implementation of Hysteresis Controlled Inverter on a Permanent Magent Synchronous Machine", M. Lajoie-Mazenc, et al.; (1984; pgs. 426-431)
	AP	"Direct Digital Control of a Self-Controlled Synchronous Motor with Permanent Magnet", C. Bergmann et al., (date unknown; 5 pgs.)
	AQ	"Definition of the Brushless DC Motor", A. Kusko et al.; Kusko Electrical Division Failure Analysis Associates, Westborough, PA (1988; pgs. 20-22)

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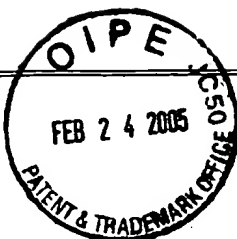
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AO	"Fast Response Reversible Brushless DC Drive with Regenerative Braking", B. V. Murty, et al.; General Motors Research Laboratories, (1984; pgs. 445-450)
AP	"Microcomputer Control for Sensorless Brushless Motor", K. Iizuka et al., Transactions of Industry Applications; Vol. IA-21, No. 4, May/June 1985; (pgs. 595-601)
AQ	"Electronically Commutated DC Motors for the Appliance Industry". D. M. Erdman et al; General Electric Company; (1984; pgs 1339-1345)

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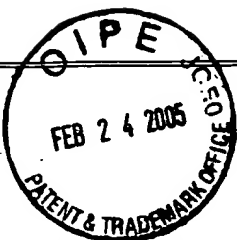
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	AO	"Four-Quadrant Sensorless Brushless ECM Drive"; R. C. Becorra et al.; GE Motors; (1991; pgs. 202-209)	/
	AP	"New Approach for the Low-Speed Operation of PMSM Drives Without Rotational Position Sensors"; Joohn-Sheok Kim, et al.; Transactions on Power Electronics, Vol. 11. No. 3, May 1996; (Pgs 512-519)	/
	AQ	"Classification of Inverter Driven Permanent Magnet Synchronous Motors"; R. Colby, Department of Electronical and Computer Engineering, North Carolina State University, (1988; 6 pgs.)	/

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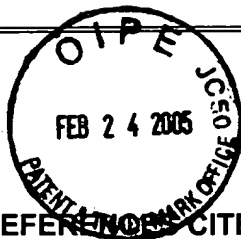
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## OTHER REFERENCES (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

AO	"Brushless DC Motor Propulsion Using Synchronous Motors for Transit Systems"; W. Pearson et al.; Transactions on Industrial Electronics, Vol. 1E-31, No. 4. November 1984 (pgs. 346-351)
AP	"Position Servo System with PM AC Motor Using 80C196 Micro-Controller"; S. Sathiakumar et al.; International Power Engineering Conference 1993; pgs. 472-477
AQ	"A Phase-Locked Loop Control System for a Synchronous Motor"; Gerald T. Volpe, Transactions on Automatic Control. Vol. AC-15, No. 1; February 1970; pgs 88-95

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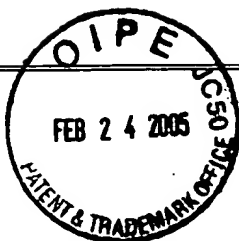
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AO	"A Super High Speed PM Motor Drive System by a Quasi-Current Source Inverter"; Isao Takahashi, et al. Department of Electrical Engineering, Nagaoka University of Technology; 1993; pgs. 657-662	✓
AP	"A New PWM Speed Control System for High-Performance ac Motor Drives"; P. Enjeti et al.; Transactions on Industrial Electronics, Vol. 37, No. 2, April 1990; pgs 143-151	✓
AQ	"Adjustable Speed Drive for Residential Applications"; Mohab Hallouda et al. Cairo University, Egypt; 1993; pgs. 928-934	✓

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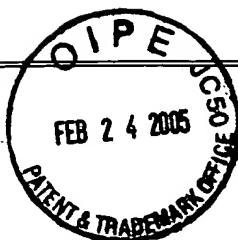
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AO	"Microprocessor Controlled True SPWM Voltage Source Inverter"; S. Sathiakumar et al.; Department of Electrical Engineering, Indian Institute of Science, India; 1984; pgs. 22-25	/
AP	"Microprocessor Based Sinusoidal PWM Inverter by DMA Transfer"; K. Rajashekara et al.; Transactions on Industrial Electronics, Vol. 1E-29, No. 1; February 1982; pgs. 46-51	/
AQ	"Micro Linear, ML4411*/ML4411A**, Sensorless Spindle Motor Controller," May 1997, 14 pgs.	/

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AO	"Brushless Permanent Magnet and Reluctance Motor Drives"; T.J.E. Miller; Oxford Science Publications; Monographs in Electrical and Electronic Engineering No. 21; 1989; pgs. 1-207
AP	"A Full-Wave Motor Drive IC Based on the Back EMF Sensing Principle"; JPM. Bahlmann; Phillips Consumer Electronics, The Netherlands; 1989; pgs 415-420
AQ	

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